



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,777	01/04/2007	Hiroyuki Asanuma	2114-0116PUS1	1156

2292 7590 09/27/2010
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

SCHULTZ, JAMES

ART UNIT	PAPER NUMBER
----------	--------------

1633

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

09/27/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Advisory Action Before the Filing of an Appeal Brief	Application No. 10/590,777	Applicant(s) ASANUMA ET AL.	
	Examiner James (Doug) Schultz, PhD	Art Unit 1633	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 15 September 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ They raise the issue of new matter (see NOTE below);
- (c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
- The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: _____.
- Claim(s) objected to: _____.
- Claim(s) rejected: 2, 8 and 9.
- Claim(s) withdrawn from consideration: 4-7.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/James (Doug) Schultz, PhD/
 Primary Examiner, Art Unit 1633

Continuation of 3. NOTE: The amendment is refused entry since it potentially raises indefiniteness issues and/or new matter issues. The indefiniteness issue arises since it is not clear how a single nucleotide can be the end of a sequence as newly recited. Regarding new matter, the specification does not use the term "end of sequence" to the best of the examiner's knowledge. While *ipsis verbis* support is not required, it is not clear where support exists for how the end of sequence complementarity relates to the specific location of "X" or "R" now claimed, particularly since the new claim recites a very particular location of "X" and "R" relative to the claim amendment's new definition of what constitutes "B". Page 6, lines 16-19 has been cited in support, but does not recite anything relating to the position of "B", and does not mention a correlate to "R" at all. Finally, the proposed new claim definition of "B" raises new issues that require further consideration and/or search, since the new claim definition of "B" narrows the claim from one embracing a nucleotide or nucleotides that could act as a linker to other optionally complementary sequences, to one requiring that the nucleotide(s) of "B" have complementarity to a target. This is a new consideration that may require further search, and entry of the amendment is denied therefore.

Continuation of 11. does NOT place the application in condition for allowance because: the request for reconsideration has been considered, but is not convincing. Applicants argue that "periphery" as used in Yamazawa should be not be construed as the outermost limit of a region or regions as cited by the examiner, but rather should be interpreted as the area around the boundary between the binding arm and the catalytic loop. In response, applicants are reminded the the examiner is to construe the claim language and the prior art as broad as reasonably possible. Thus it is not clear why the cited reasonably broad definition should be discarded in favor of applicants interpretation, and applicants have not provided any reasoning to support their exclusion of the examiner's interpretation. Furthermore, even if applicants definition reigned supreme, it is maintained that Yamazawa's teaching of an azobenzene that is at "the area around the boundary between the binding arm and the catalytic loop" would read on the structure of claim 2, since "X", corresponding to the azobenzene of claim 2 is considered to be in the area around the boundary between the binding arm and the catalytic loop, since the azobenzene of claim 2 is between the binding arm and the catalytic loop. Regarding applicants assertion that Yamazawa fails to disclose how the azobenzene is inserted into the DNA enzyme, it is noted that the instant claim is a product claim, and that how it is made would only matter if applicants were claiming that Yamazawa is not an enabling reference. If this is indeed applicant's assertion, then evidence or reasoning demonstrating how making such a molecule is unpredictable should be presented. This has not been done. In the absence of evidence to the contrary, Yamazawa is considered to be enabled for making azobenzene-containing ribozymes.

Applicants argue that Yamazawa et al. does not show a comparison of cleavage rates of their ribozymes to that of native ribozymes, and that thus Yamazawa neither teaches nor suggests improvements in cleavage activity. In response it is pointed out that the instant claims are product claims, and have been rejected under 102/103. Insofar as these arguments apply to the rejection under 35 U.S.C. § 102(b), they cannot be considered convincing, since unexpected results are not considered in rejections under 35 U.S.C. § 102. Regarding their application to the 35 U.S.C. § 103(a) aspect of the rejection, it is not clear why Yamazawa would need to disclose a comparison of azobenzene-containing ribozymes with non-azobenzene containing ribozymes in order to be considered prior art. The instant claims do not recite any "improved" characteristics as suggested by applicants (from page 8 of applicants response "One of skill in the art could not simply interpret the DNA enzymes taught by Yamazawa as also having increased cleavage activity (as in the claimed invention)...").

The assertion that Yamazawa is deficient because the instant specification shows azo-containing ribozymes with increased cleavage rates compared to native ribozymes is not considered convincing. It is not clear why an improvement in cleavage is the only benchmark for consideration. For example, it would be beneficial to have a DNA enzyme that turns off in response to UV light, which is taught by Yamazawa. Regarding the contention that Yamazawa doesn't teach an azo-containing DNAzyme compared with a native DNAzyme, Applicants are referred to figure 1 of Yamazawa, which teaches a native ribozyme, while DNAzymes 1 and 2 show decreased cleavage rates in the presence of UV light when compared to the native ribozymes. Yamazawa do teach via comparison that ribozyme activity can be controlled (turned on or off) by the introduction of azobenzene. Thus the argument that "in general, the DNA enzymes would be completely intolerant of variation...", since DNAzyme "3" shows unequivocal increase after insertion with azobenzene. If the assertion is made in reference to variation in the loop domain, such an argument is considered irrelevant, since Yamazawa is not relied upon for azo-insertion in the loop. The argument that there is no reasonable expectation to improve cleavage cannot be considered convincing in the generic sense since Yamazawa teach a DNAzyme that does increase cleavage upon azo-addition, albeit in the catalytic domain. Similarly, Yamazawa is not relied upon for teaching azobenzene insertion in the binding arm. As above, Yamazawa is relied upon for teaching ribozymes containing azobenzene in the "area between the binding arm and the catalytic loop." (*supra*, from applicants definition). The claims are considered anticipated, or in the alternative, obvious, therefore.